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NAS ALAMEDA POINT
SSIC NO. 5090.3



Arnold Schwarzenegger
Governor

December 18, 2003

Mr. Darren Newton
Department of Navy
Southwest Division
Naval Facilities Engineering Command
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**COMMENTS ON RESPONSE TO COMMENTS, DRAFT REMEDIAL
INVESTIGATION REPORT, SKEET RANGE, OPERABLE UNIT 4B, SITE 29,
ALAMEDA POINT, ALAMEDA, CALIFORNIA**

Dear Mr. Newton:

The Department of Toxic Substances Control (DTSC) has reviewed the Response to Comments (RTC) issued by the Navy regarding DTSC comments on the draft Remedial Investigation report, dated January 28, 2003 for the above referenced site. Our comments are attached. Should you have any questions, please call me at (510) 540-3767.

Sincerely,

Marcia Liao, Ph.D., CHMM
Remedial Project Manager
Office of Military Facilities

enclosure

cc: (see next page)

Mr. Darren Newton
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cc: Michael Pound, SWDiv
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TO: Marcia Liao, DTSC Project Manager
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FROM: James M. Polisini, Ph.D.
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DATE: December 8, 2003

SUBJECT: NAVAL AIR STATION ALAMEDA (ALAMEDA POINT) SKEET RANGE
ESTIMATE OF LEAD SHOT HAZARD FOR WATERFOWL
[SITE 201209-18 PCA 18040 H:24]

BACKGROUND

HERD previously reviewed the document titled *Draft Remedial Investigation Report, Skeet Range, Alameda Point, California*, dated January 28, 2003 in a HERD memorandum dated March 28, 2003. The document currently under review is the response to comments with additional Monte Carlo Analysis (MCA) material proposed to support the Navy conclusion that diving waterfowl are not at risk from ingestion of particulate lead shot at the former Skeet Range at Naval Air Station (NAS) Alameda. This document was prepared by Battelle offices in Duxbury, Massachusetts, Entrix Inc. offices in Walnut Creek, California and Neptune & Company offices in Los Alamos, New Mexico.

NAS Alameda was an active naval facility from 1940 to 1997. Operations included aircraft, engine, gun and avionics maintenance; fueling activities; and metal plating, stripping and painting. An unconfined landfill exists on the margin of San Francisco Bay in the western bayside area of NAS Alameda. In addition to skeet range activities, linked storm water and industrial wastewater lines discharged to the Seaplane Lagoon in the Northwest and Northeast corners, as well as the Oakland Inner Harbor Channel side of NAS Alameda.

The skeet range is located on the northwestern boundary of Naval Air Station (NAS) Alameda and was developed offshore as two active shooting ranges (northern and

southern) and operated for approximately 30 to 40 years. The skeet range was closed in 1993. The Contaminants of Concern (COCs) are non-particulate lead in sediment and lead shot in addition to polycyclic aromatic hydrocarbons (PAHs) associated with clay targets and clay target fragments.

GENERAL COMMENTS

The ecological portions of this assessment deals only with waterfowl intake of lead from lead shot. Intake of lead by waterfowl from other sources must be combined to assess the total lead intake and risk associated with lead.

SPECIFIC COMMENTS

1. U.S. Fish and Wildlife Service (USFWS) requested that the ecological hazard for waterfowl ingesting lead shot be considered at the Skeet Range in addition to the hazard associated with lead (non-shot) in sediment. However, the Navy response to USFWS comments on the Draft document dated January 28, 2003 are not contained in the Response to Comments dated September 30, 2003. Please provide the Navy response to USFWS comments for HERD review.
2. Please provide the relative intake of lead from lead shot as compared to the lead intake from food items to substantiate the claim that intake of lead shot is the main exposure route for diving ducks (HERD comment number 3). Prey item intake should be readily available from the Remedial Investigation (RI) Report for the skeet range.
3. Please place the description of the fate of sample SK-39 and SK-56 (HERD comment number 4), relative to their exclusion from the analysis, in the text of this report.
4. The statement regarding previous Human Health Risk Assessment (HHRA) of the Western Bayside, indicating that direct and indirect exposure in the shoreline area (HERD comment number 20) should be included in this expanded evaluation of the skeet range.

SPECIFIC COMMENTS FOR ATTACHMENT A

5. HERD does not agree with the assessment of the toxicity experiments for waterfowl used to develop a No Observable Adverse Effect Level (NOAEL) for lead shot intake adjusted to shot-size number 7^{1/2} – 9 (Attachment A, Table 2). The most recent study (Sanderson, 2002) dosed the waterfowl with 5 number 4 shot in a single dose. This obviously does not model continuous intake by waterfowl probing the sediment at the skeet range. The other study (Koranda, et al., 1979), which indicates a lead shot size-adjusted NOAEL in the same range, employed differing doses (i.e., 1, 3, and 6 number 4 shot) apparently administered a single time. The study which would appear, at least, to approach multiple intake of lead shot (Rattner, et al., 1989), with

two doses of lead shot, indicates a size-adjusted NOAEL of approximately 2 to 3 number 7 ^{1/2} – 9 shot. While understanding the uncertainty (i.e., variation) in these differing studies, HERD concludes that given the difference in lead shot intake by a waterfowl in the environment (i.e., continuous) versus single dosing, in a toxicity experiment, the ingestion of 3 to 5 number 7 ^{1/2} – 9 shot is a more appropriate waterfowl NOAEL intake.

6. HERD agrees with the U.S. EPA Region 9 Specific Comment number 15 regarding the derivation of the Toxicity Reference Value (TRV) for waterfowl exposed to lead shot. Studies excluded from derivation of a lead shot intake TRV must indicate the rationale for excluding the study (i.e. in Attachment A, Table 2).
7. The evaluation of potential hazard associated with waterfowl ingestion of lead shot outlined in this document addresses only ingestion of lead shot from the former skeet range at NAS Alameda. As such, only the potential incremental intake of lead due to lead shot at NAS Alameda is considered. Potential hazard associated with non-shot lead in sediment at the NAS Alameda skeet range as well as lead intake from other nearby skeet ranges on San Francisco Bay should be included to allow risk managers to consider the importance of incremental lead shot intake from the NAS Alameda skeet range in comparison to other sources of lead intake. The Monte Carlo Analysis (MCA) sensitivity analysis indicates that Foraging Range is the most sensitive variable in the intake model (Attachment A, page 46). At a minimum a qualitative analysis should be performed outlining the skeet ranges and former skeet ranges which waterfowl at NAS Alameda might access given the mean Foraging Range of 168.59 km² (Attachment A, Table 1). Such a qualitative assessment should only include areas within the feeding depth used for the skeet range ecological assessment at NAS Alameda. The former skeet range at Treasure Island would appear to be one candidate for inclusion, along with any skeet ranges on the eastern shore of San Francisco Bay north and south of NAS Alameda.

CONCLUSIONS

HERD appreciates the effort the Navy has made to address the potential hazard to waterfowl associated with ingestion of lead shot at the former skeet range located at NAS Alameda. However, HERD has a professional difference of opinion regarding the proposed No Observable Adverse Effect Level (NOAEL) used in the Monte Carlo Analysis. The NOAEL dispute in terms of shot ingested can, most probably, be resolved in a discussion among the regulatory agencies, trustees and Navy consultants.

HERD recommends that this assessment not be proscribed by compartmentalizing waterfowl intake of lead shot at NAS Alameda or separating intake of lead pellets at NAS Alameda from other sources of lead pellet intake. The potential hazard associated with intake of lead pellets at NAS Alameda should be evaluated as an incremental intake associated with other sources of lead intake. Dietary intake of lead at NAS Alameda as well as lead pellet intake from other skeet ranges or former skeet ranges within the proposed Foraging Range should be presented.

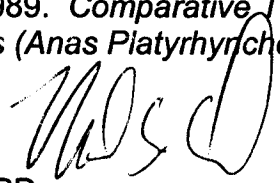
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References

Koranda, J., K. Moore, M. Stuart and C. Conrado. 1979. *Dietary Effects on Lead Uptake and Trace Element Distribution in Mallard Ducks Dosed with Lead Shot*. Lawrence Livermore Laboratory Report. 39 pp.

Rattner, B. A., W. J. Fleming and C. M. Bunck. 1989. *Comparative Toxicity of Lead Shot in Black Ducks (Anas rubripes) and Mallards (Anas platyrhynchos)*. Jour. Wildlife Dis. 25(2): 175-183.

HERD Internal Review: Mike Anderson, Ph.D.
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